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REMARKSRestriction Requirement

Applicants respectfully note that the 1/11/05 Office Action, while acknowledging Applicants' 10/22/04 traversal of the restriction requirement, fails to respond to Applicants' two specific arguments why the restriction requirement should be withdrawn. The MPEP provides that

Where the initial requirement is traversed, it should be reconsidered. If, upon reconsideration, the examiner is still of the opinion that restriction is proper, it should be repeated and made final in the next Office action. (See MPEP § 803.01.) In doing so, the examiner should reply to the reasons or arguments advanced by applicant in the traverse.

MPEP 821.01 (emphasis added). Applicants' arguments from their 10/22/04 restriction response are reiterated below, verbatim, so that the Examiner may reconsider the restriction requirement and respond to Applicants' arguments.

Applicants respectfully traverse the election requirement both because it is not timely and because a search of the limited number of species would not impose a serious burden on the Examiner.

The requirement to elect species is not timely. Authority for a requirement to elect species is found in 37 C.F.R. § 1.146, which reads, in pertinent part,

In the first action on an application containing a generic claim to a generic invention (genus) and claims to more than one patentably distinct species embraced thereby, the examiner may require the applicant in the reply to that action to elect a species of his or her invention to which his or her claim will be restricted if no claim to the genus is found to be allowable.

37. C.F.R. § 1.146 (emphasis added). Applicants respectfully note that a first office action on the merits was mailed June 30, 2004, and that Applicants filed their response on July 27, 2004. The present election requirement is therefore not timely, as it is not "[i]n the first action on an application."

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The requirement to elect species is also unnecessary because a search of the limited number of species would not impose a serious burden on the Examiner. Applicants recognize that restriction/election practice seeks to avoid multiple searches. However, MPEP 803 provides that if the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to independent or distinct inventions. It is respectfully submitted that the examination of all the species in this application will not place an undue burden on the PTO. Specifically, electronic search capabilities at the Examiner's disposal would allow her to efficiently search the limited number of species described for the amorphous thermoplastic resin in the substrate, the reflective metal layer, and the haze-prevention layer. Accordingly, it is respectfully requested that the requirement for restriction be reconsidered and withdrawn.

Nonstatutory Double Patenting Rejections

Rejection Over Application Serial No. 10/638,145

Claims 1, 2, 4-11, 15-19, 21, and 22 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-11, 13-17, 20, and 21 of copending U.S. Patent Application No. 10/638,145. 1/11/05 Office Action, page 3, paragraph no. 8. Pursuant to 37 C.F.R. § 1.130(b), Applicants are submitting herewith a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) to overcome the rejection.

Rejection Over Application Serial No. 10/638,094

Claims 1, 2, 4-11, 15-19, 21, and 22 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-9, 12-14, and 16 of copending U.S. Patent Application No. 10/638,094 ("the '094 application"). 1/11/05 Office Action, page 3, paragraph no. 9. Applicants respectfully traverse the rejection.

Applicants respectfully assert that the inventions of the instant rejected claims and the cited '094 claims are patentably distinct. The subject matter of the instant rejected

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claims is generally directed to reflective articles comprising, inter alia, an electrically non-conductive haze prevention layer. Specifically, the rejected claims each include or further limit the claim 1 limitation that “the haze-prevention layer comprises a material having a volume resistivity of at least 1×10^4 ohm-centimeters measured according to ASTM D257 at 25°C.” In contrast, the subject matter of the cited ‘094 claims is generally directed to a data storage medium comprising, inter alia, a haze prevention layer with metal (i.e., an electrically conductive material). See, e.g., the first listed definition of “metal” in the Merriam Webster Online Dictionary, available at <http://www.m-w.com/home.htm> (“1 : any of various opaque, fusible, ductile, and typically lustrous substances that are good conductors of electricity and heat, formations by loss of electrons, and yield basic oxides and hydroxides; *especially* : one that is a chemical element as distinguished from an alloy” (emphasis added)). Specifically, the cited claims of the ‘094 application each include or further limit the ‘094 claim 1 limitation that “the haze-prevention layer comprises a metal . . .” Thus, the rejected claims of the instant application, which require a haze prevention layer with a non-conductive component, and the cited claims of the ‘094 application, which require a haze prevention layer with a metal which is inherently electrically conductive, are patentably distinct. The Examiner is therefore incorrect in stating that “the scope of the claims of the copending application is broader than that of the instant claims, rendering them obvious over each other.” This statement is incorrect for two reasons. First, it incorrectly suggests that the scope of the instant rejected claims represents a subset of the scope of the cited claims of the ‘094 application. Second, even if the scope of the rejected claims of the instant application were a subset of the scope of the cited claims of the ‘094 application, that would not necessarily render the rejected claims obvious over the cited claims. Otherwise, it would not be possible to patent an invention that is an improvement on an invention described in an earlier, broader, dominating claims. That clearly is not the law.

Finally, the Examiner is incorrect in stating that “[t]he claims of the copending application disclose all the limitations as recited in the instant claims.” 1/11/05 Office Action, page 4, first full paragraph. The rejected claims each include or further limit the

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claim 1 limitation that "the haze-prevention layer comprises a material having a volume resistivity of at least 1×10^{-4} ohm-centimeters measured according to ASTM D257 at 25°C." This limitation is not disclosed in the cited claims of the '094 application.

For all of the above reasons, Applicants respectfully request the reconsideration and withdrawal of the provisional obviousness-type double patenting rejection of claims 1, 2, 4-11, 15-19, 21, and 22 over claims 1-3, 5-9, 12-14, and 16 of the '094 application.

Rejection Over Application Serial No. 10/638,100

Claims 1, 2, 4-11, 15-19, 21, and 22 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-9, 12-14, and 16 of copending U.S. Patent Application No. 10/638,100 ("the '100 application"). 1/11/05 Office Action, page 4, paragraph no. 10. Applicants respectfully traverse the rejection.

All of the arguments advanced in traversal of the rejection over claims of the '094 application are equally applicable to the present rejection. Although the '094 claims are specifically directed to a data storage medium and the '100 claims are generally directed to a reflective article, there is substantial overlap between the limitations in the bodies of the respective claims. In particular, the cited '100 claims include or further limit the limitation that "the haze-prevention layer comprises a metal . . ." Thus, the arguments in response to the rejection over the '094 claims are also applicable to the rejection over the '100 claims. To briefly summarize, the arguments are, first, that the rejected instant claims, which require a haze prevention layer with a non-conductive component, and the cited claims of the '100 application, which require a haze prevention layer with a metal which is inherently electrically conductive, are patentably distinct; second, that, contrary to the Examiner's assertion, the scope of the scope of the rejected claims is not a subset of the scope of the cited '100 claims; and third, that, contrary to the Examiner's assertion, the cited '100 claims do not disclose all limitations of the rejected claims. The Examiner is referred above for details of the arguments, which are all applicable here.

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Accordingly, Applicants respectfully request the reconsideration and withdrawal of the provisional obviousness-type double patenting rejection of claims 1, 2, 4-11, 15-19, 21, and 22 over claims 1-3, 5-9, 12-14, and 16 of the '100 application.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1, 2, 4-11, 15-19, 21, and 22 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 6,355,723 to van Baal et al. ("van Baal"). 1/11/05, page 5, paragraph no. 13. Applicants respectfully traverse this rejection.

Van Baal generally describes a molded article suitable for direct application of a reflective metal coating. Van Baal abstract (emphasis added). The molded article includes an amorphous thermoplastic or thermoplastic blend having a glass transition temperature greater than about 170° C. and at least one thermally stable colorant that contributes to the article's dark appearance. *Id.* A key advantage of the molded article is that it has a sufficiently smooth surface that it can be directly coated with a reflective metal. *Id.* at col. 3, l. 61 to col. 4, l. 5 and col. 4, ll. 49-50. In practice, this has been a key commercial advantage, because it allows manufacturers to omit the time and expense associated with a separate step of pre-coating the molded plastic part before applying a reflective metal coating. Although such a pre-coating step is not required, van Baal teaches that it may optionally be employed. Specifically, the molded plastic substrate may be pre-coated with a primer before coating the metal. *Id.* at col. 4, ll. 50-52. The molded article may also, optionally, comprise a clear protective layer on top of the metal layer. *Id.* at col. 4, ll. 52-54. The clear protective layer may be a silicone-derived clear coat deposited by plasma-based silicone polymerization. *Id.* at col. 4, ll. 54-56. Note, in particular, that van Baal's reference to the silicone-derived clear coats is in the context of the optional clear protective layer applied over the metal layer, not the optional primer layer between the molded substrate and the metal layer. In sum, the van Baal invention is directed to a reflective article that exhibits high reflectivity and low haze as-manufactured without the need for a primer layer between the molded thermoplastic substrate and the reflective metal layer. The composition of the thermoplastic substrate enabled this advantage.

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While working in the same product arena, the present inventors have tackled a different problem with a different solution. They observed that although reflective articles, in particular automotive headlights, exhibited high reflectivity and low haze when they were manufactured, these properties tended to degrade over time. After extensive research to determine the nature of the problem and to explore possible solutions, it was discovered that degradation of reflectivity and haze could be substantially reduced if the reflective articles included, between the thermoplastic substrate and the reflective metal layer, a haze prevention layer comprising certain materials. Although the suitable materials have chemically diverse compositions, they are united by the common properties of a volume resistivity of at least 1×10^{-4} ohm-centimeters measured according to ASTM D257 at 25°C and a tensile modulus of at least about 3×10^5 pounds per square inch measured according to ASTM D638 at 25°C. Thus, the present inventors have been able to significantly improve the performance of reflective articles in high-temperature environments by discovering that decreases in reflectivity and increases in haze over time can be substantially reduced by incorporating between the thermoplastic substrate and the reflective metal layer a haze prevention layer having particular properties.

Noting that van Baal teaches the optional use of a silicone-derived clear coat deposited by plasma-based silicone polymerization on the face of the reflective metal layer opposite to thermoplastic substrate, and conceding that van Baal does not teach the use of a silicone-derived clear coat between the substrate and the reflective metal layer, the Examiner now suggests that it would have been obvious to take the silicone-derived clear coat of Baal and move it from the face of the reflective metal layer opposite to thermoplastic substrate so that it is interposed between the thermoplastic substrate and the reflective metal layer. Specifically, the Examiner has stated that

Although Baal teaches the plasma-polymerized silicone clear coat to be on the outer surface of the metal layer, instead of between the substrate and the metal layer, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that the order of the layers in an article would not have significant patentable weight. This is because whether the silicone-containing layer is between the substrate and the metal layer or outside the metal layer would not change the effects or

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properties of the article in term [sic] hazing prevention. And rearrangement of parts would not impart patentability to the article. See MPEP 2144.04VIC.

1/11/05 Office Action, page 6, first paragraph. Applicants respectfully disagree.

Applicants' claim 1 is patentable over van Baal because van Baal does not provide a suggestion or expectation of success for the claim 1 invention. The Examiner misstates the standard for obviousness by stating that "it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that the order of the layers in an article would not have significant patentable weight." Rather, "[t]he consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the proposed modification] should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art." *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). "Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *Id.* Van Baal does not suggest interposing a silicone-derived clear coat between the thermoplastic substrate and the reflective metal layer. To the contrary, van Baal teaches away from such a modification by specifying that the silicone-derived clear coat is to be used as a clear protective layer on top of the reflective metal layer. *Id.* at col. 4, ll. 52-56. To move the silicone-derived clear coat between the thermoplastic substrate and the reflective metal layer would defeat its purpose as a clear protective layer. Furthermore, interposing a silicon-derive clear coat between the thermoplastic substrate and the reflective metal layer would defeat van Baal's professed key advantage of enabling direct coating of the reflective metal onto the thermoplastic substrate. Van Baal abstract. Van Baal thus not only fails to suggest but teaches away from a silicone-derived clear coat interposed between the thermoplastic substrate and the reflective metal layer that would satisfy Applicants' claim 1 limitation of a "a haze-prevention layer interposed between the substrate and the reflective metal layer, wherein the haze-prevention layer comprises a material having a volume resistivity of at least 1×10^{-4} ohm-centimeters measured according to ASTM D257 at 25°C and a tensile modulus of at least about 3×10^5 pounds per square inch measured according to ASTM D638 at 25°C." Since van Baal teaches away from a silicone-derived clear coat interposed between the thermoplastic

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substrate and the reflective metal layer, it is not surprising that van Baal does not provide any expectation of success for such a configuration. The Examiner has therefore failed to show that van Baal provides either a suggestion or expectation of success for Applicants' claim 1 invention. Accordingly, a prima facie case of obviousness based on van Baal has not been established, and claim 1 is patentable over van Baal.

Applicants also respectfully assert that the section of the MPEP cited by the Examiner has been misapplied to the present claims. The Examiner appears to be citing MPEP 2144.04 VI. C., which is reproduced in its entirety below.

C. Rearrangement of Parts

In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice). However, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

MPEP 2144.04 VI. C. Both *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) are distinguishable as relating to the placement of a particular component in an apparatus, whereas the present issue relates to the layer order in a layered article. The MPEP's quotation from *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984) is also distinguishable as relating to the issue of placement of components in an apparatus. And, even to the extent that it could be applied by analogy to a layered article, it would support the patentability of Applicants' claim 1 invention: "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's

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specification, to make the necessary changes in the reference device.” *Id.* Here, van Baal teaches a particular layer order the purpose of which (surface protection of the reflective metal layer) would be defeated by the Examiner’s proposed rearrangement of layers to place the protective layer between the reflective metal layer and the substrate. There is therefore no motivation “to make the necessary changes” to van Baal to obtain Applicants’ claim 1 invention. In short, MPEP 2144.04 VI. C. is not applicable to layered articles, and to the extent that it might be applied by analogy, it supports the patentability of Applicants’ claim 1.

Given that claim 1 is patentable over van Baal, and that claims 2, 4-11, 15-19, 21, and 22 each include or further limit all the limitations of claim 1, claims 2, 4-11, 15-19, 21, and 22 are also patentable over van Baal.

Applicants further note that several of the rejected claims are further patentable because van Baal fails to teach their respective limitations. Establishing a *prima facie* case of obviousness requires that all elements of the invention be suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974). Several of the rejected claims contain limitations not suggested by van Baal. For example, as discussed above, van Baal fails to teach the claim 9 limitation that “the haze-prevention layer comprises a plasma-polymerized organosilicone.” Claims 10 and 11, which further limit claim 9, are therefore also patentable over van Baal. Van Baal also fails to teach the claim 15 limitation that “the haze-prevention layer has a thickness of about 100 nanometers to about 100 micrometers.”

For all of the above reasons, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1; 2, 4-11, 15-19, 21, and 22 under 35 U.S.C. § 103(a) over van Baal.

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It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862 maintained by Assignee.

Respectfully submitted,

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